DEPARTMENT of ENVIRONMENTAL SERVICES
Water Division - Watershed Management Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake:	MACK POND	**Lake Area (ha):**	4.9
Town:	MADISON	**Maximum Depth (m):**	6.1
County:	CARROLL	**Mean Depth (m):**	3
River Basin:	MERRIMACK	**Volume (m^3):**	148000
Latitude:	43°43'53" N	**Relative depth:**	2.4
Longitude:	71°71'10" W	**Shore Configuration:**	1.21
Elevation (ft) :	474	**Areal water load (m/yr):**	7.36
Shore length (m):	950	**Flushing Rate (yr^{-1}):**	2.4
% Watershed Ponded:	5.2	**P retention coeff.:**	0.59
Watershed Area (ha)	62.1	**Lake Type**	natural

BIOLOGICAL:		**05-Feb-04**	**03-Sep-03**
DOM. PHYTOPLANKTON (% TOTAL)	#1	DINOBRYON 75%	CHRYSOSPHAERELLA 75%
	#2	MALLOMONAS 9%	DINOBRYON 25%
	#3		
CHLOROPHYLL-A (ug/L)			2.89
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 81%	NAUPLIUS LARVA 32%
	#2		KERATELLA 16%
	#3		POLYARTHRA 16%
ROTIFERS/LITER		17	35
MICROCRUSTACEA/LITER		2	54
ZOOPLANKTON ABUNDANCE (#/L)		21	96
VASCULAR PLANT ABUNDANCE			Common
SECCHI DISK TRANSPARENCY (m)			4.6
BOTTOM DISSOLVED OXYGEN (mg/L)		6	0.9
BACTERIA (E. coli, #/100ml)	#1		<10
	#2		<10
	#3		

SUMMER THERMAL STRATIFICATION:

weakly stratified

Depth of thermocline (m):	None
Hypolimnion volume (m^3):	None
Anoxic Volume (m^3):	None

CHEMICAL: **Lake: MACK POND**
Town: MADISON

	05-Feb-04		03-Sep-03		
DEPTH (M)	2.0	4.0	1.0		4.0
pH (units)	5.9	5.8	6.2		6.0
A.N.C. (Alkalinity)	6.0	5.8	6.6		8.0
NITRATE NITROGEN	0.05	0.05	< 0.05		< 0.05
TOTAL KJELDHAL NITROGEN	< 0.25	< 0.25	< 0.25		< 0.25
TOTAL PHOSPHORUS	0.005	0.005	0.007		0.012
CONDUCTIVITY (umhos/cm)	38.9	39.7	37.7		45.4
APPARENT COLOR (CPU)	18	18	8		12
MAGNESIUM			0.46		
CALCIUM			3.4		
SODIUM			2.6		
POTASSIUM			0.49		
CHLORIDE	4	4	3		5
SULFATE	2	2	2		2
TN : TP	35	35	21		13
CALCITE SATURATION INDEX					

All results in mg/L unless indicated otherwise

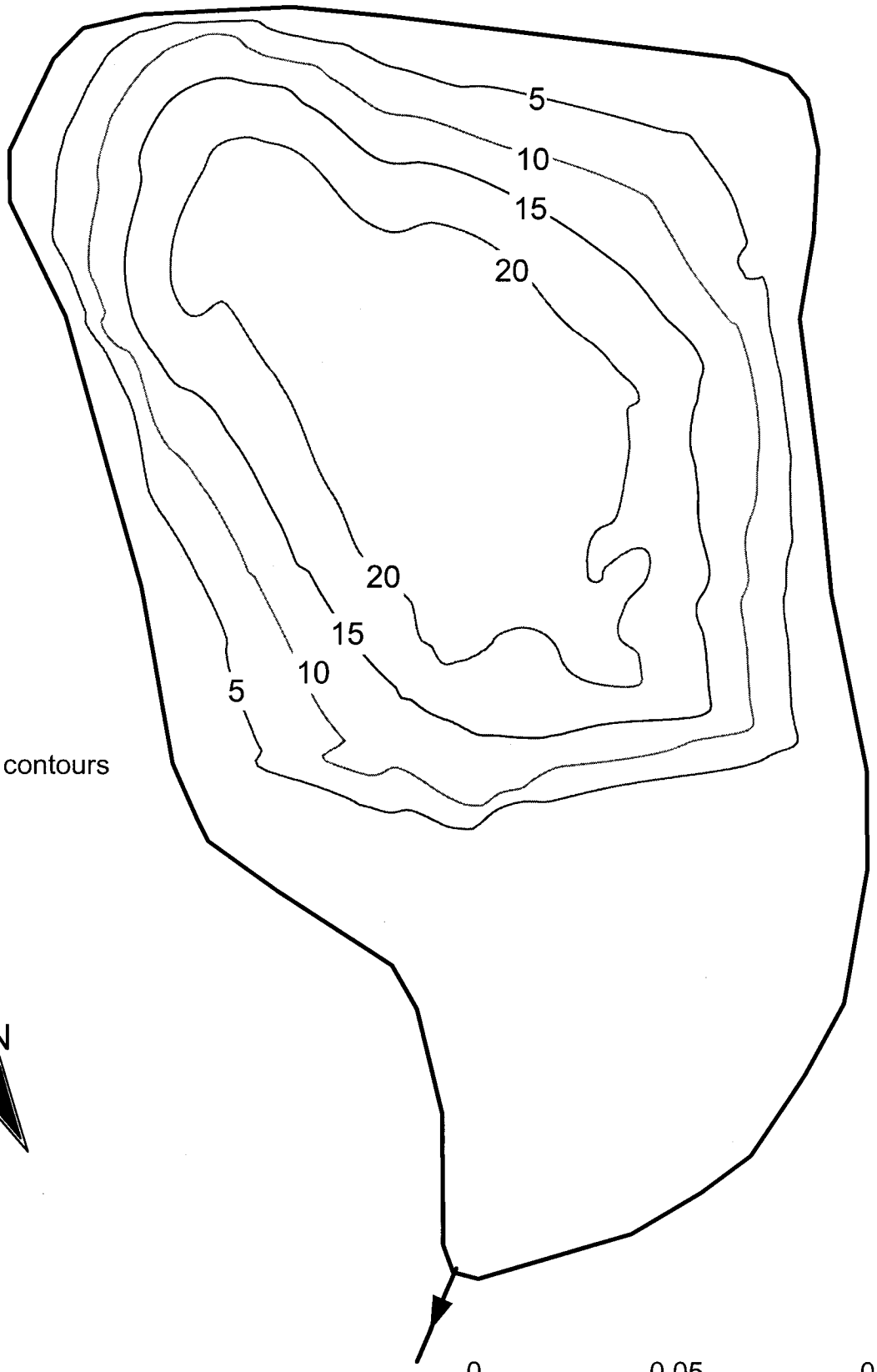
TROPHIC CLASSIFICATION: 2003

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
**	2	3	0	5	MESO

COMMENTS:

1. Previously surveyed in 1995. No change in trophic class and little meaningful change in trophic parameters between the two years. Much less dissolved oxygen was present at the bottom in 2003, but the sample was collected much later in the summer (the 1995 sample was collected in June).
2. No public access; 10 minute walk-in access with canoe.
3. No development along the shore.
4. Moderately acidic, clear-water pond.

Mack Pond
Madison



5 foot depth contours

FIELD DATA SHEET

LAKE: MACK POND **TOWN:** MADISON

DATE: 9/3/03 **WEATHER:** Partly sunny, cool & breezy

	DEPTH (M)	TEMP (°C)	DISSOLVED OXYGEN (mg/L)	PERCENT SATURATED
	0.1	20.6	8.0	89.5
	1.0	20.3	8.1	89.7
	2.0	19.9	7.9	86.4
	3.0	18.6	8.8	93.6
	4.0	16.6	5.1	52.3
	5.0	14.1	0.9	8.9

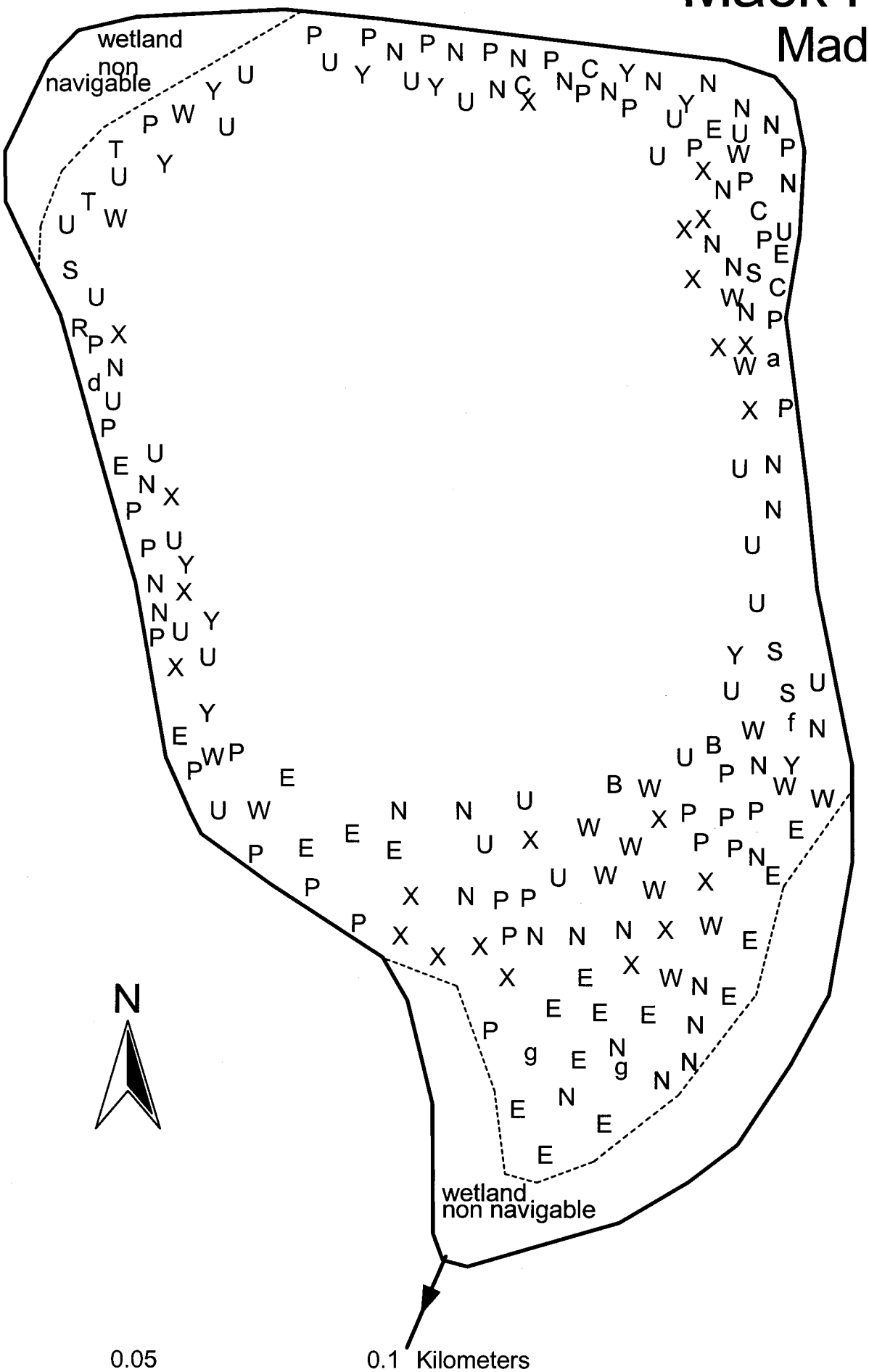
SECCHI DEPTH (m) : 4.6

BOTTOM DEPTH (m) : 5.7

TIME: 1145

COMMENTS:

Mack Pond
Madison



AQUATIC PLANT SURVEY

LAKE: MACK POND **TOWN:** MADISON **DATE:** 9/3/03

KEY	PLANT NAME		ABUNDANCE
	GENERIC	COMMON	
P	Pontederia cordata	Pickerelweed	Common
S	Sparganium	Bur reed	Sparse
N	Nymphaea	White water lily	Common
W	Potamogeton	Pondweed	Sparse
a	Carex	Sedge	Sparse
X		Sterile thread-like leaf	Common
E	Eriocaulon septangulare	Pipewort	Sparse
U	Utricularia	Bladderwort	Scattered
B	Brasenia schreberi	Water shield	Sparse
Y	Nuphar	Yellow water lily	Sparse
T	Typha	Cattail	Sparse
R	Sarracenia purpurea	Pitcher-plant	Sparse
d	Drosera	Sundew	Sparse
g	Spongilla	Freshwater sponge	Sparse
f		Filamentous algae	Sparse
C	Cyperaceae	Non-flowering sedge	Sparse
		OVERALL ABUNDANCE :	Common

GENERAL OBSERVATIONS :

1. Three wood duck boxes and one beaver lodge were present.
2. Wetlands were present at both the northwest and southern (outlet) ends of the pond.